

Claims:

1. An insert for use in a beverage preparation machine of a type comprising a brew head comprising an upwardly directed inlet for supplying water to the brew head and a downwardly directed outlet for outflow of beverage produced by the machine, the insert comprising, or being adapted to contain in use, a quantity of beverage ingredients in a brewing volume, a lower surface of the insert comprising an inlet and an outlet arranged to communicate respectively with the inlet and outlet of the brew head of the beverage preparation machine when the insert is inserted into the machine such that, in use, water from the inlet of the brew head passes upwardly through the inlet of the insert into the brewing volume and such that beverage produced from the water and the quantity of beverage ingredients passes downwardly through the outlet of the insert to flow out of the outlet of the brew head, characterised in that the lower surface of the insert further comprises a RFID or barcode which, in use, is readable by a RFID or barcode reader of the beverage preparation machine for controlling operation of the beverage preparation machine, wherein the barcode or RFID is located on the lower surface of the insert such that a line joining the outlet of the insert to a centre of the barcode or RFID and a line joining the outlet of the insert to the inlet of the insert separated by a minimum angular separation of greater than 70 degrees.
2. An insert as claimed in claim 1 wherein the line joining the outlet of the insert to the centre of the barcode or RFID and the line joining the outlet of the

insert to the inlet of the insert subtend an angle of greater than or equal to 85 degrees.

3. An insert as claimed in any preceding claims wherein  
5 the outlet is located at a centre or near a centre of the lower surface of the insert.

4. An insert as claimed in any preceding claim wherein the barcode or RFID is located at or near a periphery of the  
10 lower surface.

5. An insert as claimed in any preceding claim wherein the insert is disc-shaped.

15 6. An insert as claimed in any preceding claim wherein the insert is a cartridge.

7. An insert as claimed in claim 6 wherein the cartridge is rigid or semi-rigid.

20 8. An insert as claimed in claim 6 or claim 7 wherein the lower surface is a laminate.

25 9. An insert as claimed in any of claims 6 to 8 wherein the inlet and outlet of the cartridge are portion of the lower surface which are opened for transportation, in use, by piercing the lower surface.

30 10. An insert as claimed in any of claims 1 to 5 wherein the insert defines a receptacle for receiving loose beverage ingredients.

11. An insert as claimed in any of claims 1 to 5 wherein the insert defines a receptacle for receiving a container of beverage ingredients, wherein the container comprises filtering means.

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12. An insert as claimed in claim 11 wherein the container is formed at least in part from filter paper or filtering membrane.

10 13. An insert as claimed in claim 12 wherein the container is a filter bag.

14. An insert as claimed in any of claims 10 to 13 wherein the inlet and outlet of the insert are open.

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15. An insert as claimed in any of claims 10 to 13 wherein the inlet and outlet of the insert are closed prior to use by means of a frangible membrane.

20 16. An insert as claimed in claim 15 wherein the frangible membrane comprises a tear-off portion.

17. An insert as claimed in any of claims 10 to 16 which is reusable.

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18. An insert as claimed in any preceding claim wherein the inlet of the insert, outlet of the insert and barcode or RFID are coplanar.

30 19. An insert as claimed in any preceding claim wherein the inlet of the insert, outlet of the insert and barcode or RFID are not coplanar.

20. An insert as claimed in any preceding claim wherein the insert further comprises means for preventing rotation of the insert in the brew head after insertion of the insert  
5 and closing of the brew head.

21. An insert as claimed in claim 20 wherein the means for preventing rotation comprises an externally directed handle or tab portion.

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22. An insert as claimed in claim 21 wherein the externally directed handle or tab portion is located substantially diametrically opposite the inlet of the insert.

15 23. A beverage preparation system comprising a beverage preparation machine and an insert for use in said machine, said insert being as claimed in any preceding claim.

24. A beverage preparation system as claimed in claim 23  
20 wherein the beverage preparation machine comprises a brew head comprising an upwardly directed inlet for supplying water to the brew head, a downwardly directed outlet for outflow of beverage produced by the machine and a barcode or RFID reader having a window in the brew head through which  
25 signals may be transmitted, wherein a line joining the outlet of the machine to a centre of the window and a line joining the outlet of the machine to the inlet of the machine subtend an angle of greater than 70 degrees.

30 25. A beverage preparation system as claimed in claim 24 wherein the line joining the outlet of the machine to the centre of the window and the line joining the outlet of the

machine to the inlet of the machine subtends an angle of greater than or equal to 85 degrees.

26. A beverage preparation system as claimed in claim 24 or  
5 claim 25 wherein the outlet of the beverage preparation machine is located at or near a centre of the brew head.

27. A beverage preparation system as claimed in any of claims 24 to 26 wherein the barcode reader or RFID reader  
10 window is located at or near a periphery of the brew head.

28. A beverage preparation system as claimed in any of claims 24 to 27 wherein the brew head comprises a mount for receiving the insert so as to prevent relative rotation of  
15 the insert and the brew head once the brew head is closed.

29. A beverage preparation system as claimed in claim 28 wherein the mount comprises a recess or opening for receiving an externally directed handle or tab portion of  
20 the insert.

30. A beverage preparation system as claimed in claim 28 or claim 29 wherein the mount comprises an opening through which the inlet of the brew head, outlet of the brew head  
25 and barcode reader or RFID reader window are accessible.

31. A beverage preparation system as claimed in any of claims 24 to 27 wherein the brew head comprises a cavity for receiving the insert wherein one of the insert and cavity  
30 comprises a key and the other of the insert and cavity comprises a recess, wherein interengagement of the key and

recess prevents relative rotation of the insert and the brew head once the brew head is closed.